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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,107	03/22/2002	Hisakazu Tanaka	020307	5051

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EXAMINER

ZALUKAEVA, TATYANA

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,107

Applicant(s)

TANAKA ET AL.

Examiner

Tatyana Zalukaeva

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 3, 10-16, 18 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-9, 17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/18/2002.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group 1, claims 1-9, 17 and 19, in Paper No. 12/10/2003 is acknowledged.
2. Claims 10-16, 18, 19 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 12/10/2003.
3. Applicant's election with traverse of species of polysuccinimide as the anhydropolymino acid having at least one ethylenically unsaturated double bond (A) and acrylic acid as the water soluble monomer (B). in Paper No. 12/10/2003 is acknowledged. The traversal is on the ground(s) that the Examiner has not presented an argument in accordance with PCT Rules 13.1 and 13.2 regarding lack of unity of invention between the species in the claims. This is not found persuasive because of the reasons set forth in the election requirement: unity of invention referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions considered as a whole, makes over the prior art. The species listed in the instant claims do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, although they share the special technical feature, this special technical feature does not define a contribution over the prior art because at least the species of

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glutamic and aspartic acid derivatives are either anticipated or obvious by Hall (U.S.

5,756,447)

The requirement is still deemed proper and is therefore made FINAL.

Claims 1,2, 4-9, 17 and 19 within elected Group I are readable on the elected species.

Claim 3 is also withdrawn from consideration.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4, 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited "wherein the anhydropolyamino acid having at least one ethylenically unsaturated double bond in a molecule (A) is a reaction product of an anhydropolyamino acid having no ethylenically unsaturated double bond in a molecule (A- 1) and a compound which has an ethylenically unsaturated double bond and a unctional group having reactivity with the anhydropolyamino acid (A-1) in a molecule (A-2)" is indefinite because it recites A-1 and A absolutely identically, and then providers for reaction of A-1 with A-2 to obtain a compound that has already been defined as A-1. Correction is required.

Claim 7 recited polysuccineimide as A-1, however, the instant specification, and Applicants' paper 12/1/2003 recites polysuccineimide as a component A. Correction

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and/or clarification is required. The instant specification on page 4 recites "Examples of the anhydropolyamino acid (A- 1) include anhydride of polyaspartic acid and polyglutamic acid. Among these anhydropolyamino acids, polysuccinimide as an anhydride of polyaspartic acid is preferred in view of industrial availability.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 ,2, 4-6, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Freeman et al (U.S. 5,531,934) or Hann et al (U.S. 5,568,464).

Freeman discloses homopolymers and **copolymers** of the poly(amino acids) , wherein the polyaminoacids comprise a reaction product of at least one compound selected from amino acids, amic acids, ammonium salts of monoethylenically unsaturated dicarboxylic acids, ammonium salts of hydroxypolycarboxylic acids and combinations thereof (abstract, col.2, lines 60-67). The polyaminoacids are presented by general formula I , line 60, col.3. The term "poly(amino acids)," is meant to include hydrolyzed and non-hydrolyzed poly(amino acids). "Hydrolyzed polyamino acids" are **anhydropolyamino acids** which have been reacted or hydrolyzed with at least one common base or acid.

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The term "poly(amino acids)" as herein defined is also meant to include homopolymers of amino acids and copolymers of amino acids. (col. 4, lines 4-11). Aminoacids are presented in col.5, lines 18-35. As said before, the anhydropolyaminoacids can be copolymerized with other monomers to obtain copolymers. Carboxylic acids useful as additional monomers for polymerization are listed in col.6, lines 11-33, wherein (meth)acrylic acid is named in line 20 of col.6.

Hann discloses copolymer of anhydropolyaminoacid (abstract, col.4, lines 4-11, col.3, formula I, col.4, lines 22-25) with other monomers among those are unstaruted carboxylic acids, such as (meth)acrylic acid col.6, lines 19, 20). The anhydropolyaminoacid is reaction product of at least one compound selected from amino acids, amic acids, ammonium salts of monoethylenically unsaturated dicarboxylic acids, ammonium salts of hydroxypolycarboxylic acids and combinations thereof (abstract, col.2, lines 64-67, col.5, lines 1-10). With regard to the water absorbing property of the copolymer, it is noted that the preamble here is not accorded significant patentable weight, because it recites a statement of intended use or purpose, and as a rule does not limit the scope of the claim, since the statements in preamble merely define the context in which the invention operates, DeGeorge v. Bernier, 226 USPQ 758,761, n.3 (Fed.Cir. 1985). With regard to claim 5, since the copolymer of Freeman and Hann is identical to those as claimed, it is fully capable of forming gel particles as instantly claimed.

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Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 7 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Freeman.

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Freeman discloses polyaspartic acid as the most preferred polyaminoacid in claim 2 and he also provides for anhydropolyaminoacids derived from polyaminoacids. The anhydride of aspartic acid is a succineimide. In the event that one of the ordinary skill in the art would not immediately envisage Applicants' instantly claimed polysuccineimide, then the compound is rendered obvious from the disclosure found in the prior art. The prior art contains of Applicants' instantly claimed polyaminoacid and clearly suggests to one of ordinary skill in the art that they be used to obtain anhydroaminoacid. Such a suggestion renders obvious applicants' instantly claimed compound, and as such, the claims are not patentable. With regard to claim 9 the rejection is made in the sense of *In re Fitzgerald* (205 USPQ 594). (CAFC), wherein the base presumption that the properties governing the claimed copolymers, if not taught, may be very well met by the copolymers of Freeman or Hann, since the ethylene copolymers of Freeman or Hann are essentially the same and made in essentially the same manner as applicants' polymer. The burden to show that this, in fact, is not the case is shifted to applicants.

12. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman in view of JP 10025984.

Freeman does not disclose the use of his polymers in water absorbent articles. The use of polyaminoacids in water absorbing articles, such as paper diapers is known in the art. JP'984 discloses absorbing resin, capable of manifesting excellent water absorbing performances, especially excellent water absorption rate together with biodegradability and useful as a water absorber for a paper diaper, agriculture,

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horticulture or the like by forming a cross-linked polyamino acid having into a flaky shape. Polymer comprises gel particles. (see abstract)

The paper diapers of JP'984 present the assembly wherein the fiber material is impregnated with polymer and arranged between permeable and impermeable sheets. Therefore, it would have been obvious to those skilled in the art to replace the copolymer of JP with analogous, but having an additional monomeric iunit, copolymer of Freeman in order to impart better despersibility to the polymer and better absorbing properties to the article.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tatyana Zalukaeva, Ph.D.
Primary Examiner
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Primary Examiner
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February 26, 2004